

YUAN “CHARLES” CUI

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yccui.github.io

EDUCATION

Northwestern University	Evanston, IL
<i>Ph.D., Computer Science</i>	2020 - Present
<i>Advisor: Matthew Kay</i>	
<i>Master's, Computer Science</i>	2023
<i>Advisor: Matthew Kay</i>	
Oberlin College	Oberlin, OH
<i>B.A., Mathematics, Computer Science</i>	2016 - 2020
Budapest Semesters in Mathematics	Budapest, HU
<i>Study Abroad</i>	2019

PUBLICATIONS

- Promises and Pitfalls: Using Large Language Models to Generate Visualization Items.** Yuan Cui, Lily W. Ge, Yiren Ding, Lane Harrison, Fumeng Yang, Matthew Kay. *IEEE VIS* 2024.
- Odds and Insights: Decision Quality in Exploratory Data Analysis Under Uncertainty.** Abhraneel Sarma, Xiaoying Pu, Yuan Cui, Eli T Brown, Michael Correll, Matthew Kay. *ACM CHI* 2024.
- Adaptive Assessment of Visualization Literacy.** Yuan Cui, Lily W. Ge, Yiren Ding, Fumeng Yang, Lane Harrison, Matthew Kay. *IEEE VIS* 2023.
- CALVI: Critical Thinking Assessment for Literacy in Visualizations.** Lily W. Ge, Yuan Cui, Matthew Kay. *ACM CHI* 2023. (Best Paper Honorable Mention)
- Can an Algorithm be My Healthcare Proxy?.** Duncan McElfresh, Samuel Dooley, Yuan Cui, Kendra Griesman, Weiqin Wang, Tyler Will, Neil Sehgal, and John Dickerson. *Explainable AI in Healthcare and Medicine* 2021.

PROFESSIONAL EXPERIENCE

Max Planck Institute for Demographic Research	Rostock, Germany
<i>Social Data Science Researcher</i>	06/2024 - 08/2024
Building statistical models to estimate age-specific mortality at the national and subnational levels in a data scarce context.	
RegLab @ Stanford Law School	Stanford, CA
<i>Graduate Fellow</i>	06/2023 - 08/2023
Designed statistical sampling techniques to estimate racial disparity when data is scarce, and established performance guarantees with mathematical proofs. Built simulations and estimated the health disparity in a dataset containing ~7M Americans' healthcare records.	
Carnegie Mellow University & Data Science for Social Good Foundation	Pittsburgh, PA
<i>Data Science Fellow</i>	05/2022 - 08/2022
Built a machine learning system to improve the routing of the 988 Suicide & Crisis Lifeline which serves 2,000,000+ callers per year. Obtained preliminary results that showed the new system could help ~20,000 additional callers each year.	

University of Chicago Consortium on School Research

Remote

Research Intern

03/2022 - 05/2022

Conducted clustering analysis on Chicago Public Schools data to predict students' graduation rate.

HomeRiser, Inc

Remote

Co-founder, Head of Data Science

01/2021 - 10/2021

Co-founded a real estate technology start-up that uses a novel business model powered by data science to provide more flexible and affordable ways to finance people's home ownership. Developed a financial model in Python that simulated cash flow and generated a detailed profit and loss statement.

PRESENTATIONS, WORKSHOPS, TUTORIALS

Conference Presentations

IEEE VIS. *"Adaptive Assessment of Visualization Literacy."* Oct 2023, Melbourne, Australia.

Data for Good. *"Improving the 988 Suicide & Crisis Lifeline's Service Through Better Call Routing."* Sept 2022, Seattle, WA. Joint with Irene Tang.

Tutorials

ACM FAccT. *"Data Externalities."* Mar 2021, Remote. Joint with Rediet Abebe, Mihaela Curmei, Andreas Haupt, and Yixin Wang.

Workshops

ACM CHI. *"Toward a More Comprehensive Understanding of Visualization Literacy."* May 2024, Honolulu, Hawaii. Joint with Lily W. Ge, Maryam Hedayati, Yiren Ding, Karen Bonilla, Alark Joshi, Alvitta Ottley, Benjamin Bach, Bum Chul Kwon, David N. Rapp, Evan Peck, Lace M. Padilla, Michael Correll, Michelle A. Borkin, Lane Harrison, Matthew Kay.

HONORS AND AWARDS

NICO Intersection Science Fellowship, Northwestern University 2024

HCI + Design Cluster Fellowship, Northwestern University 2022

Phi Beta Kappa, Oberlin College 2020

Elbridge P. Vance Scholar of Mathematics, Oberlin College 2016 - 2020

PROFESSIONAL SERVICE

EAAMO Bridges (formerly MD4SG)

Remote

Co-Director

2022 - present

Co-Lead of the Data Economies Working Group

2021

Membership Manager

2021

Conference Reviewer

IEEE VIS

2024

ACM CHI

2024

Conference Volunteer

ACM STOC	2021
ACM EC	2020

TEACHING EXPERIENCE

Teaching Assistant

Northwestern University	Evanston, IL
Computer Science Department	2021-2024
<i>Design & Analysis of Algorithms, Mathematical Foundations of Computer Science (2x)</i>	

Oberlin College	Oberlin, OH
Mathematics Department	2017-2020
<i>Linear Algebra (2x), Discrete Mathematics (2x), Calculus II, Calculus I</i>	
Economics Department	2019
<i>Principles of Finance</i>	
Computer Science Department	2017
<i>Introduction to Computer Science</i>	

TECHNICAL

Programming

Python, R, PostgreSQL, \LaTeX

Organization

Github, Trello

Research Software and Skills

Qualtrics, Prolific